

Bottle Feeding of Low Facial Muscle Tone Infants

by **CATEA** on September 9, 2010

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Intro: Bottle Feeding of Low Facial Muscle Tone Infants

Instructions for making a device to hold bottle to feeding hand

Problem Statement

The device to hold bottle while bottle feeding are created specifically for the mothers who have children with Down Syndrome. The children with Down Syndrome often times have a low muscle tone in their face and therefore cannot apply suction to a bottle to feed. Mothers must use their thumb, forefinger, and sometimes their middle finger to adjust the baby's jaw so the correct suction can be applied so they can feed. Holding the child and the child's face makes it difficult to hold the bottle and feed the baby. With both hands occupied during feeding mothers have had to resort to balancing the bottle on their feeding hand.

Design Parameters

The device should allow mothers to stabilize the bottle for feeding. The device should be adjustable for length and width of bottle, angle of bottle, and size of wrist and hand. The device should be user friendly, comfortable and easy to manufacture.



step 1: PROTOYPES

For this Bottle Feeding - we have five prototypes.

step 2: Foam-Velcro Prototype

For this design concept, Velcro was used to attach the bottle to hand. The foam pieces offer stability (pink foam) and change in the angle of bottle (yellow foam).

Composed of three parts:

1. Bike Glove with Velcro superglued to the thumb-index finger area of the glove.
2. Foam Wedge with Velcro superglued to inclined edge and bottom surface.
3. Modification of the Tip-toes design (tip-toes.com) to hold bottle. Velcro is attached to bottom and top surface to latch onto the foam block and then the bottle, respectively.

Bottle modification: tape a Velcro piece along the bottle (length wise)



step 3: Velcro with C-bracket Prototype

Design Concept:

Use Velcro to attach C-bracket to hand. The C-bracket holds the bottle in place, and the Velcro attached to the hand provides stability and some range of motion.

Composed of three parts:

1. Bike Glove with Velcro superglued to the thumb-index finger area of the glove.
2. C-bracket with Velcro attaches to the glove's Velcro.
3. Bottle fits snugly into the C-bracket.

Bottle Modification: none



step 4: Foam with Velcro Strap Prototype

Design Concept:

Use Tiptopes foam and Velcro strap to hold foam piece to wrist.

Composed of two parts:

1. Foam Tiptoes with slots cut for Velcro strap.
2. Off-the-shelf Velcro strap.

Bottle modification: none



step 5: Hand Cuff with Pivot-Head Prototype

Design Concept:

Utilize standard hand cuff, pivot joint, and C-bracket to hold the bottle securely while providing adjustable positioning of the bottle.

Composed of four parts:

1. Hand cuff with single hole drilled and threaded to accept male-end pivot joint.
2. Male-end pivot joint (orange).
3. Female-end pivot joint (blue).
4. C-Bracket drilled and bolted to female-end pivot joint.

Bottle modification: none



step 6: Pistol Grip with Pivot-Head Prototype

Design Concept:

Incorporate a custom grip for digits 3, 4, and 5, a pivot joint, and C-bracket to utilized the grip strength of the entire hand while holding the bottle securely and providing adjustable positioning of the bottle.

Composed of four parts:

1. Custom grip made from aluminum shaft, drilled and threaded to accept male-end pivot joint, and rubber coated.
2. Male-end pivot joint (orange).
3. Female-end pivot joint (blue).
4. C-Bracket drilled and bolted to female-end pivot joint.

Bottle modification: none





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Comments

7 comments

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cefn says:

I don't know whether this is quite the same thing, but a lady I used to work with called Mandy Haberman created the Haberman Feeder, which seems to address a similar niche. I think it was problems feeding children with cleft palate that she was inspired by.

<http://www.mandyhaberman.com/haberman-feeder>

Oct 11, 2010. 11:25 AM [REPLY](#)



CATEA says:

Thank you so much for your nice support.

Oct 7, 2010. 2:32 PM [REPLY](#)



sclaussion says:

Very creative idea that can help countless parents. I hope you can bring it to market. Proof that necessity is the "mother" of invention.

Oct 4, 2010. 11:12 AM [REPLY](#)



isacco says:

Many congratulations for the idea, the quality of the Instructable, and the solid usefulness of this tool

Oct 1, 2010. 4:32 AM [REPLY](#)



RedMeanie says:

Sep 29, 2010. 10:54 PM **REPLY**

What an awesome idea! I love inventions that come from the heart. The 5th and 6th seem the easiest by looking at them to replicate easily and cheaply. I guess you could give a rating on each of which was most effective from experience as you went through the transitions.

I'm speaking as a parent of two, and one has lung issues which require her to breath an inhaler at times. There is an adapter to make the inhaler like a little oxygen mask. Very handy, and seeing your device here hit home that maybe some parent like you took the time to develop the device to help their child. How much we sometimes take for granted.

I'm sure that many of us here on "Instructables" could help you with developing a finished product that you could possibly make available to other parents out in the world that could benefit from a clever device like this.

Great Job!



Iemonie says:

Sep 29, 2010. 4:05 PM **REPLY**

There's some nice work in there, good stuff.

L



camiller says:

Sep 29, 2010. 3:49 PM **REPLY**

Very clever. As a parent of a child with down syndrome I can tell you that this would have been great back when our little guy was an infant! It usually took contorting our arm into an uncomfortable position to hold the bottle with his head cradled in the elbow of the same arm or it took both of us! I would have paid for something like this 9 years ago.

Good work!